Information Technology Infrastructure Services

Supported E-Learning System

Pratiwi

Perbanas Institute Jakarta

Author Note

Pratiwi, Faculty of Information Technology, Perbanasa Institute

wiek.pratiwi@gmail.com; pratiwi@perbanas.id
Abstract

The success of e-learning system performed on the learning process has been done with the evaluation of the users (teachers and students). There are still arguments about the factors that can be used to evaluate the success of e-learning systems. Need more attention to investigating the role of infrastructure services for information technology (IT) as the foundation of a successful e-learning system. In the last years the higher education as Perbanas Institute are learning that using e-learning, combined with learn as usual. Some of the existing research resulted that this method gives success rate at study some subjects, which seen from the results of learning, interest and satisfaction of learners. The focus of this paper is the role of IT infrastructure services in terms of the success of e-learning system at higher educational especially in capital city. The empirical study confirms that IT infrastructure services supported the validity of the numbers and reliablities in measuring the success of e-learning system. In the other hand, this study provides evidence of the important role of services of IT infrastructure in the success of e-learning system through significant effect on the perceived benefits. Evaluation of the success of e-learning systems is an important issue facing universities that use these applications, and to consider the importance of process evaluation to evaluate these types of systems.

Keywords: IT Infrastructure Services; e-learning system, evaluation
INTRODUCTION

There have been changes large enough in the field of Information Technology (IT), especially in the field of education. Online learning is now happening everywhere at all levels of education, in all educational institutions, and in the workplace. E-learning system has been developed to support teaching and learning in university or college in the world. E-learning system considered an important application in educational institutions today. Perbanas Institute Jakarta implemented e-learning blended with face-to-face or lecturer as usual. The Learning Management System (LMS) is a learning management system that has been adopted by 95 percent of all higher education institutions in the UK (McGill & Klobas, 2009). E-learning is also used for non-educational institution that is for employee training. The training activities are based on the e-learning system. Electronic applications such as e-commerce, e-learning, e-health, and e-banking have become commonplace in the last decade. This application continues to face the challenges of the high failure rate. All education efforts is a system, made up of various components that are interconnected. In traditional universities and colleges, teachers can be aware of all the complexities involved, but in distance education, to understand how the whole system development course and delivery occur, and how these systems connect to the service and other components is an important aspect to ensure the effectiveness and quality. In the learning process with the online system is one that was developed from scratch, save costs and reduce the role of staff without reducing the quality of learning. In a learning system as well as any circumstances that are definitely not appropriate from the expected ideal shape. This happens on limited resources, the old system is entrenched, the need for well-trained teaching staff, also on the policy unworkable. Finally, the process is inadequate, the administrative system is not running with the new system. Additionally there are things to consider such as curriculum,
technology pembelajaranya and more. In this paper the key aspects of e-learning infrastructure will be explained and then adapted to the situation.

**Literature study - methodology**

Each learning system that is built in to every business sense to learn online, then any part of the institution will have a specific purpose, and values that should be considered when planning and designing the ideal system. Building infrastructure for online learning must consider many factors. All teaching and learning system must be built on two basic ie needs of the learners (students) and learning outcomes (ie, competence, knowledge or skills achieved), or in other words, should facilitate the needs of learners in learning to improve learning outcomes. Learning by online learning system must be based on a plan that flows from a full understanding of these two needs. The technological knowledge of learners is important too, including expectations of financial and other resources, access to the web or other online networks, bandwidth limitations, and other pertinent information about the readiness and ability for learners to participate fully in the learning process. For example, if in the learning of the course, students need to have access to high-speed connectivity that facilitates it in using the e-learning system imposed on campus. In this case the campus will probably prefer to use systems that require high bandwidth, and provides alternate access to online learning components (for example, with CD-ROM) to serve learners who have not been served by a system that has a high speed. Identify the needs of e-learning systems such as system design learning assessment, and curriculum-related learning process system can be designed mixture (blended) should be obtained with a clear analysis of critical thinking. Perbanas Institute Jakarta which has two faculty saw this opportunity and organized a blended learning system to continue to use the system to learn face to face but are
supported by e-learning system. It is according to the needs of learners (students) and the expected learning outcomes.

**Structure of E-Learning in general**

The education by e-learning based needs a good understanding of the institution and student characteristics and needs of the curriculum used especially in higher education. It can be seen through the learning outcomes of the program pembelajaran to be used and developed. On this basis, the framework of online learning (e-learning) as a whole can be developed. This framework will demonstrate the organization of the various components of the proposed system, and will facilitate the development of a fairly complete.
This picture describes a framework for higher education institutions such as Perbanas Institute Jakarta. In the process of pembelajaran, it must be determined how the learning outcomes (Learning Outcomes) are expected later translated into the content and the learning process that involves resources for learners/students to achieve the desired results. After the basic parameters are done, the development team will be responsible for translating the theory of learning modules and online functions to be delivered by a learning management system (LMS). Support digital
libraries and other digital resources are also other services (registration, helpdesk, test forms), and Student Information System (SIS) through a secure server that can authenticate the login learners. From the perspective of learners, they will be connected to the LMS and related services through a portal that is user-friendly so that with just one login can have access to all the programs associated with that of the e learning and services inside. Finally, the evaluation process for the effectiveness of the system, based on the achievement of learning outcomes and feedback learners also feed back into the development cycle.

Infrastructure aspects of online learning, especially for those who manage (the college management in the field of infrastructure technology) is responsible for information technology support. There are two things that are related and, on the relationship between the academic field (field of study) and administrative. Relation to whether the information technology functions on two things connect and interact with one another. This relationship is an important aspect of this issue. On the staff of online learning and e learning system needs a lot of support and maintenance of the computing unit is in the center of campus. In general, administrative computing units prefer a more centralized system. In practice elearning priorities and different approaches emerge, and a clear statement of roles and responsibilities, processes, and policies should be established to help balance the need for control.

**Components of E-Learning System**

The main components in an e-learning system is infrastructure e- learning, system and aplication of e-learning, content e- learning. Infrastructure e-learning can be a personal computer (PC), a local computer network (intranet), internet, and multimedia media or teleconfrence. The system of e-learning software which is useful to make the learning process more conventional virtual.
How classroom management, creation of learning materials, discussion forums, online examination system scoring system and all the features associated with the management of the learning process. System software in e-learning that's known as a Learning Management System (LMS). Content and teaching materials for e-learning systems. Content in e-learning can shaped interactive multimedia (Multimedia-based Content), may also form texts such as textbooks and other teaching materials. The material is stored in a Learning Management System so that students can access anytime if e-learning is based on Internet technology. The components of e-learning, the success of an e-learning system there must be a teacher as an instructor, students who receive and use and to receive teaching materials teachers and administrators who manage sustainability and administration of e-learning.

**Learning Management System**

Important decisions that must be made during the development stage is the selection of LMS. Learning Management System is a term that refers to the concept of Learning System (LMS) is a software-based application system technology information and communication. The device is useful for planning system, implement, and assess student learning processes and products. Moreover, this system useful for improving system quality improvement learning sustainable. LMS selection if it is based on need alone, without consideration cost, availability of qualified staff, or the requirement to use the system existing or adapt the selection of open-source LMS. The need to adapt with a new LMS can have a negative impact on the learning experience of students.
**Digital Library**

LMS program connects to the resources they need online is important also from any online system. The need for access to get in and look into digital databases of journals, magazines and government publications. In addition, learning resources will be increasingly accessible through the home and digital repository externally. In developing the infrastructure for online learning is that the availability of these resources online to be guaranteed, or at least anticipated, so the learning programs developed accordingly.

**Service On Students**

In online learning services to students must be considered. How to serve the needs of learners with its characteristics and transform. This pattern of learning during learning with face to face become independent online (e-learning). This will complete the online learning with the ability to adapt to learners (students).

**Student Information Systems Interface**

Student Information Systems Interface and LMS should be integrated so it seemed Interesting as an online learning system. In many situations, there are more than one LMS, each of which must be connected to the SIS user Portal. Portal should enable learners, with a secure login, to access everything of interest to students. LMS, the value of learning outcomes and documentation related to e-learning. Portal also allows adjusting. Web portal page to be a unique interface, connecting with easy to other learners and staff, related services.
E-learning infrastructure

Infrastructure to build e-learning include, server, client server, UTP, concentrators, modems, LAN settings, Internet sharing and trouble shouting network.

![Figure 2. Components of E learning](http://ilmukomputer.com)

CONCLUSION

In developing the infrastructure that supports excellence in e-learning, the main one is a clear understanding of the objectives of the curriculum and the characteristics and needs of the learners. Not forgetting a conducive learning environment with committed staff, so that the implementation of learning to work well. In the end, like the higher education system, e-learning is primarily a business man, with the technology available to support the principles and objectives of learning.
References

Davis A, 2008. Developing An Infrastructure For Online Learning, Athabasca University.


